Risk Management

TARDEC Systems Engineering Workshop
June 2, 2011

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What is a Risk?

Risk is the potential of *future* uncertainties in achieving program performance goals and objectives within established baselines of cost, performance and schedule constraints. A risk may be mitigated to prevent it from occurring or reduce its impact if it occurs

If the item being described has already occurred in real time, it is an ISSUE and not a RISK.

The words IF, THEN and MAY in a problem statement indicates that something has not yet occurred, but has the potential to occur in the future, hence it is a risk.

The goal of risk management is to help ensure program cost, schedule and performance objectives are achieved at every stage in the life cycle.

Why do Risk Management?

"There is only one reason for risk management: To assure the program decision-makers learn about and deal with important risks before they turn into issues".
- Carnegie Mellon University "Risk Management Overview for TACOM"

Benefits of Risk Management include:

- *Minimize or prevent cost overruns, schedule delays, and performance problems*
- *Product and design quality are improved.*
- *Maximizing usage of resources.*
- *Promoting teamwork and system engineering.*
- *Communication to stakeholders and decision makers.*

Why do Risk Management?

"The first step in the risk management process is to acknowledge the reality of risk. Denial is a common tactic that substitutes deliberate ignorance for thoughtful planning"

- Charles Tremper

Why do Risk Management?

"The first step in the risk management process is to acknowledge the reality of risk. Denial is a common tactic that substitutes for thought

"Risk is like fire: If controlled it will help you ; if uncontrolled it will rise up and destroy you".

- Theodore Roosevelt

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- Roger Vanscoy

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"If you do not actively attack the risks, they will actively attack you."
-Tom Gib

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I am used to thinking three or four months in advance about what I must do, and I calculate on the worst. If I take so many precautions it is because it is my custom to leave nothing to chance .
- Napoleon

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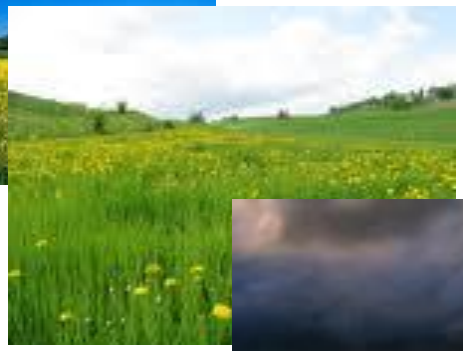
Plan and Mitigate…

…the Path to Success

Does Risk Affect You???

It's a beautiful day, not a cloud in the sky…



until the clouds roll in…

and it starts to rain…

and thunder and lightning begin…

Risk Affects Everyone…

Even on a beautiful day, though the likelihood is low, there is still the risk of loss of power from a thunderstorm. Lightning has the *potential* to hit your house or a power tower during a storm. *If* the lightning strike hits your house or a power tower *then* power to the house *may* be lost, and the consequence could be that your alarm clock may not go off, making you late for work.

Risk Defined

Risk is the potential of *future* uncertainties in achieving program performance goals and objectives within established baselines of cost, performance and schedule constraints.

If the item being described has already occurred in real time, it is an ISSUE and not a RISK.

The words IF, THEN and MAY in a problem statement indicates that something has not yet occurred, but has the potential to occur in the future, hence it is a risk.

Risk Mitigation

In the previous example of loss of power during a thunderstorm, the risk is the loss of power, the consequence is that you might be late to work, but what can be done to mitigate this risk from becoming an issue?

The goal of risk management is to mitigate risks to prevent them from becoming issues. In this case, mitigation steps and action plans could include:

- Installing a back-up generator in your home's electrical system
- Burying power lines underground to reduce the risk of downed power lines due to high winds.
- Adding lightning rods to the top of your house to ground the lightning strike.

Each of these plans can help mitigate the risk, though each has a different impact to the risk consequence and likelihood. Some plans are more successful and easier to achieve than others.

Issue Defined

- An issue is something that has already occurred.
  - **Issues includes:**
    - **A past or current problem**
    - **A future certainty (probability of occurrence = 1).**

TIP:

If a root cause is described in the past tense, *the root cause has already occurred*, and therefore, it is an issue that needs to be corrected, not a risk to be prevented.

Risk vs. Issue

- A risk can be *mitigated*; an issue must be *corrected*.

- If risk mitigation is unsuccessful, a risk may become an issue after an event has occurred, such as:
  - Testing - The future root cause – “if testing fails” has become an issue when “testing has failed”.
  - Schedule Slip - a date where mitigation was required by has been exceeded causing further schedule slips
  - Etc.

Key Components of Risk

A Risk is composed of three key components:

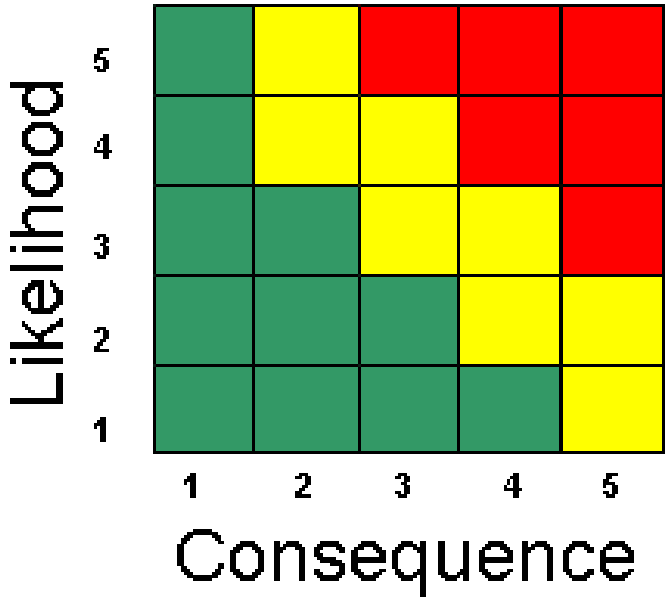
1. **Future root cause** (yet to happen), which, if mitigated, eliminated or corrected, would prevent or minimize a potential consequence from occurring

2. **Likelihood**, or probability, of the future root cause event occurring

3. **Consequences**, or impact to the project, of the future event occurring.

Risk Matrix

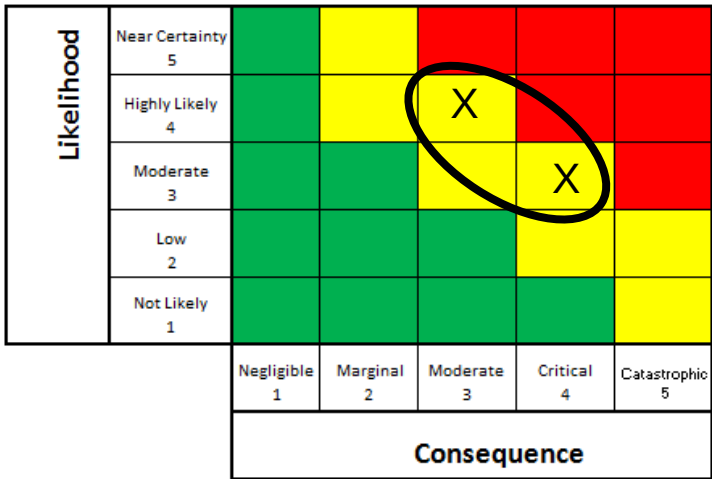
The likelihood and consequences are tracked in a risk matrix (*see below*). Their combined values form a risk rating or assessment of high, medium or low.



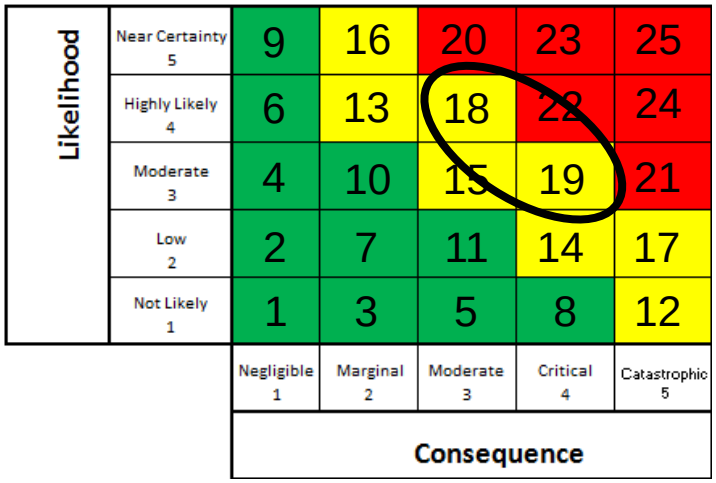
Risk Rating = Likelihood X Consequence

- Likelihood describes the probability of the event occurring.
- Consequence denotes the magnitude of loss.

Ranking of Risk Ratings



A "4,3" and "3,4" – Which Rates Higher?



Risk Recon Weighted Ratings

One thing that is important to note is that the consequence rating is typically weighted higher than the equivalent likelihood number.

For instance – a "4,3" where the consequence is the "4" is weighed higher than a "3,4" where the likelihood is a 4. This is because the consequence is viewed as of slightly higher importance than the likelihood.

This is also used as they way risks are organized in a hierarchy for risk reports – those equivalent risk numbers (example "3,5" or "5,3") are ranked with the higher consequence number first.

Consequence Guidance

(Available in Risk Recon under "Help" and "Tip Sheet")

Rating / Description	Performance	Cost	Schedule
5 (Catastrophic) Jeopardizes an exit criterion of current acquisition phase.	Unacceptable; No viable alternatives exist.	Program budget impact by 10% or more; Program success jeopardized.	Key events or milestones delayed by more than one month.
4 (Critical) Potentially fails Key performance parameter (KPP).	Unacceptable; Significant changes required.	Program budget impact by 5% – 10%; Significant portion of program management reserves must be used to implement workarounds.	Critical path activities 2 weeks late; Workarounds would not meet milestones; Program success in doubt.
3 (Moderate) Shorts a critical mission need but expect no breech of KPP threshold requirements.	Below goal; Moderate changes required; Alternatives would provide acceptable system performance; limited impact on program success.	Budget impacted by 1% - 5%; Limited impact on program success; Does not required significant use of program cost and or schedule reserves.	Non-critical path activities one month late; Workarounds would avoid impact on critical path; Limited impact on program success.
2 (Marginal) Requires the commitment of a minor portion of the program cost, schedule or performance reserve.	Below goal but within acceptable limits; No changes required; Acceptable alternatives exist; Minor impact on program success.	Budget impacted by 1% or less; Minor impact on program success; Minor commitment of program management reserves (schedule, cost) used for workarounds.	Non-critical path activities late; Workarounds would avoid impact on key and non-key milestones; Minor impact on program success; Development schedule goals exceeded by 1% - 5 %.
1 (Negligible) Remedy will require minor cost, schedule and/or performance trades.	Requires minor performance trades within the threshold – objective range; No impact on program success.	Budget not dependent on the issue; No impact on program success. Cost increase can be managed with program plan.	Schedule not dependent on issue; No impact on program success; Schedule adjustments managed within program plan.

Likelihood Guidance

(Available in Risk Recon under "Help" and "Tip Sheet")

Level	Likelihood	Probability of Occurrence
1	**Not Likely**	Occurrence is possible but very unlikely (<10%) Approach and processes are well understood and documented.
2	**Low Likelihood**	Occurrence possible but less than likely (10% to 40%) Current approach and processes understood and documented; most technology has been validated.
3	**Moderate (Likely)**	Significant chance of occurrence (>40% to 65%) Approach and processes are partially documented; Un-validated technology has been shown to be feasible by analogy, test or analysis.
4	**Highly Likely**	Very high chance of occurrence (>65% to 90%) Approach and processes not well documented; Technology available but not validated.
5	**Near Certainty**	Assume and anticipate occurrence (>90%) Approach and processes cannot mitigate risk; Immature technology; System very complex.

Risk Recon – Risk Management Tool Benefits

• ***Ease of Use*** - The software is easy to use – training of personnel takes approximately 1 hour.

• ***Uniform Method for Capturing and Reporting Data*** – Captures data in a centrally accessible, secure location.

• ***Imbedded Reporting*** – Risk Recon has several built-in reporting options including an Executive Summary and export to an Excel spread sheet. Future upgrades include metrics for monitoring mitigation plans, pie charts for historical comparisons, the ability to "e-mail update" notices to team members, etc.

• ***Integrated Process Flow*** – Risk Recon has an integrated work process flow in the software as well as a notification system for when new risks are created.

• ***Attachments*** – Risk Recon has an attachment function so that the team can attach briefs, data, etc to the risk – saves time on updating the risk status and eliminates duplication of effort.

• ***No Cost*** – Since Risk Recon is owned by the US Army, there is no program cost for using this database.

Risk Recon – Risk Management Tool Benefits

• ***Traceability*** - There is 100% traceability for risk history – nothing is ever permanently deleted.

• ***Accessibility*** - It is a database that everyone can access – unlike an excel spreadsheet that can only be accessed by one person at a time and lacks traceability. The software can be accessed by all DoD locations and off-site with a user name and password. Access can be limited down to the product level.

• ***Server Based Application*** - The software runs from a server – "unlimited" users at one time.

• ***Data Storage*** - There is virtually unlimited storage for risks – memory limitation is not a concern.

• ***Security*** - It is secure for information including FOUO – Classified information is not permitted, though classified teams do use the database with "code" language.

• ***Customization*** – The tool is owned by PEO GCS but overseen by the Risk Recon IPT represented by all user groups. This allows all users to have input in requesting upgraded features for future versions of Risk Recon.

Current Risk Recon LCMC Customers
~750 users registered:

MRAP (Used by both Army and USMC):

MaxxPro
RG-31
Caiman
M-ATV
RG-33
Cougar
Buffalo
Capabilities Insertion
International Programs
Acquisition
Survivability
Logistics
T&E
BFM
GFE

Abrams

Bradley

Fire Support Platforms

Stryker

RS JPO

TARDEC CGVDI (formerly GVIC & PIF) for:

MRAP

LAV

C4ISR

RS JPO

Stryker

GCV

TARDEC HPLwT

TARDEC KE APS ATO

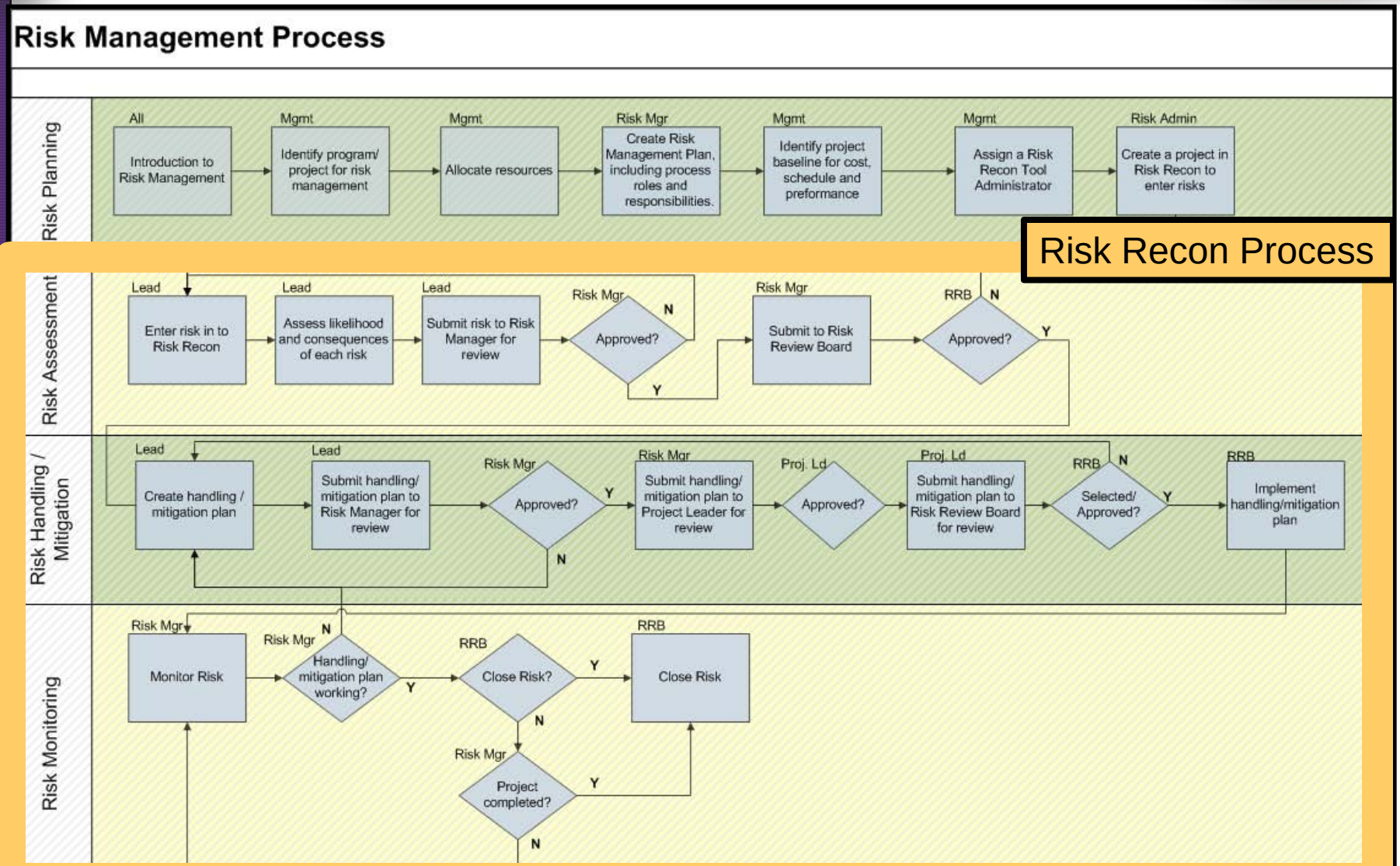
TARDEC VPL ATO

PM LAV Foreign Military Sales

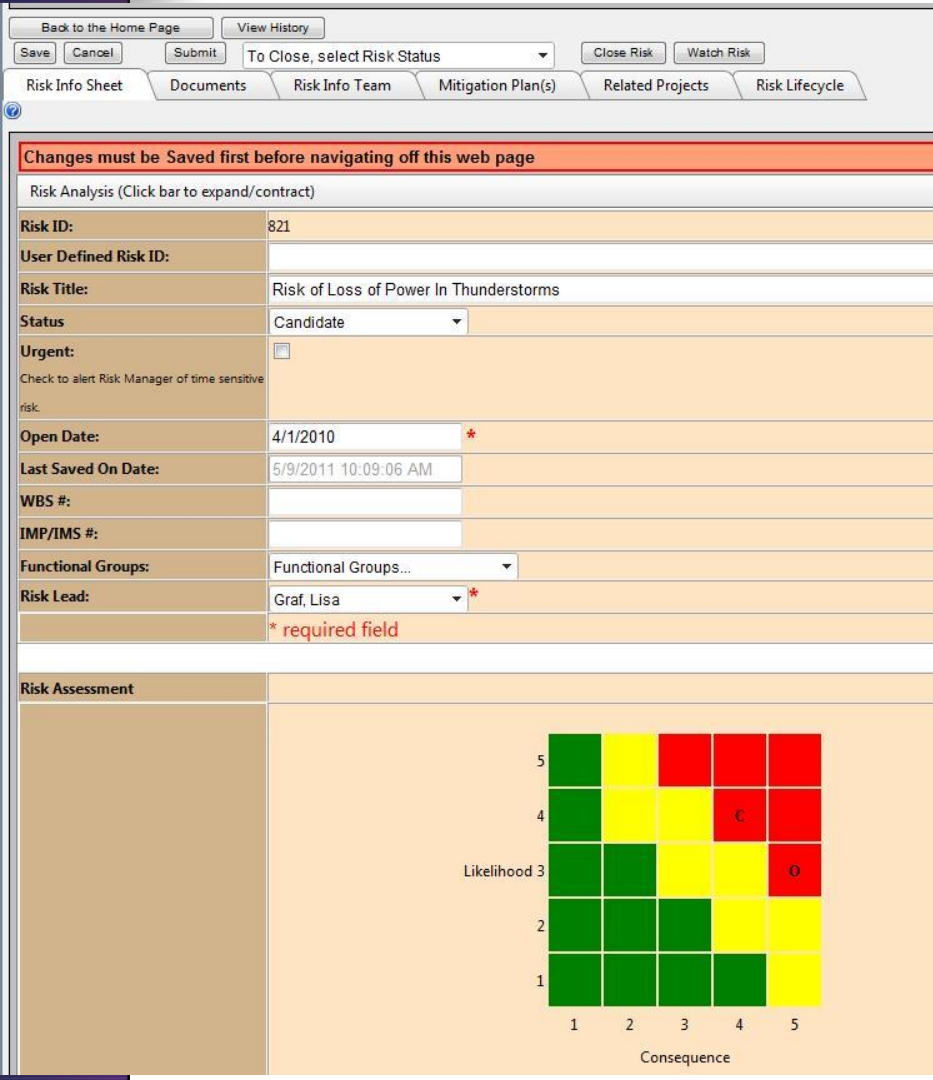
TARDEC VEA/CBM

TARDEC TECS

Risk Management Process Workflow



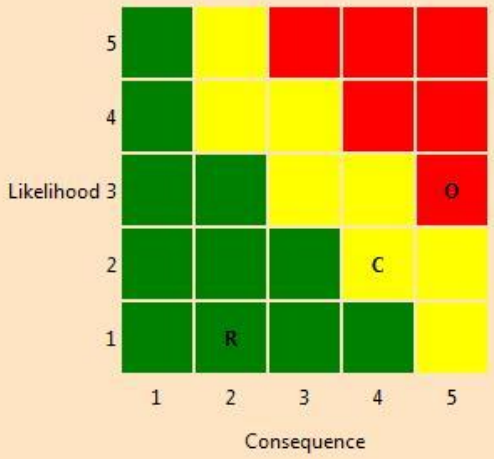
Creating a Risk In Risk Recon



- Filling out the risk information is easy.
- Initial risk input takes < 5 minutes.
- Additional time required for mitigation steps.

- Create a Risk Title.
- Confirm Open Date.
- Enter WBS #, IMP # if applicable.

Creating a Risk In Risk Recon



Original Consequence (O):	(5) Catastrophic *
Original Likelihood (O):	(3) Moderate *
Current Consequence (C):	(4) Critical *
Current Likelihood (C):	(2) Low Likelihood *
Residual Consequence (R):	(2) Marginal
Residual Likelihood (R):	(1) Not Likely

Risk Impacts	
Cost:	☑
Schedule:	☑
Performance:	☑
Other:	☐
Affects the Critical Path:	☐

- The Risk Matrix has three Risk Ratings:
  - Original
  - Current
  - Residual

- Select Risk Impacts:
  - Cost
  - Schedule
  - Performance
  - Other
  - Critical Path

Creating a Risk In Risk Recon

Description of Risk Condition: Clear and concise - cite only one Risk condition.	If there is a thunderstorm with high winds and lightning strikes occur, then loss of power to homes may occur and people may be without power.
Context: What, how, why, where of the risk condition.	If a thunderstorm occurs and high winds in excess of 60 mph occur (WHAT), then power lines may come down due to high winds (HOW) and loss of power may occur (WHAT). If lightning strikes occur (WHAT), then transformers may be hit and damaged (HOW) and loss of power may occur (WHAT). This may occur because power lines are exposed to the environment (WHY) and subject to wind damage and lightning strikes. This can affect home and people (WHO) subdivision wide or any building in the area that the power system supplies power to (WHERE).
Consequence if realized: In terms of cost, schedule, performance and other.	If power is lost in a storm then homes will not have power. This can lead to loss of food in the refrigerator (COST), alarm clocks that don't work and people may be late to their jobs (SCHEDULE) and worrying about failed systems such as sump pump systems (PERFORMANCE) may cause performance issues at work to those affected.
Mitigation Plan Summary (Plan overview and desired end state; residual risk.): You may enter your basic mitigation plan details here or you can click on the Mitigation Plan(s) tab to enter a more detailed plan.	The goal of the mitigation strategy is to put in long term and short term plans to reduce the risk of losing power so that the end state is that power will only be lost for a maximum of three hours at a time (the new requirement).

Description of Risk – One sentence – an "IF/THEN/MAY" statement.

Context of the Risk – The "Who, What, Where, When, Why, How and How Much?" of the risk.

Consequence – The "So What if it Happens?"

Mitigation Plan – Mitigation steps can be entered here or on the mitigation plan table. Mitigation steps should include target dates and persons responsible.

Creating a Risk In Risk Recon

Consequence if realized: In terms of cost, schedule, performance and other.	If power is lost in a storm then homes will not have power. This can lead to loss of food in the refrigerator (COST), alarm clocks that don't work and people may be late to their jobs (SCHEDULE) and worrying about failed systems such as sump pump systems (PERFORMANCE) may cause performance issues at work to those affected.
Mitigation Plan Summary (Plan overview and desired end state; residual risk.): You may enter your basic mitigation plan details here or you can click on the Mitigation Plan(s) tab to enter a more detailed plan.	The goal of the mitigation strategy is to put in long term and short term plans to reduce the risk of losing power so that the end state is that power will only be lost for a maximum of three hours at a time (the new requirement).
Close out rationale: New problem/issue with ID number, overtaken by events, Mitigation plan successful... Who approved this closure? Date of risk closure? Reason for risk closure?	

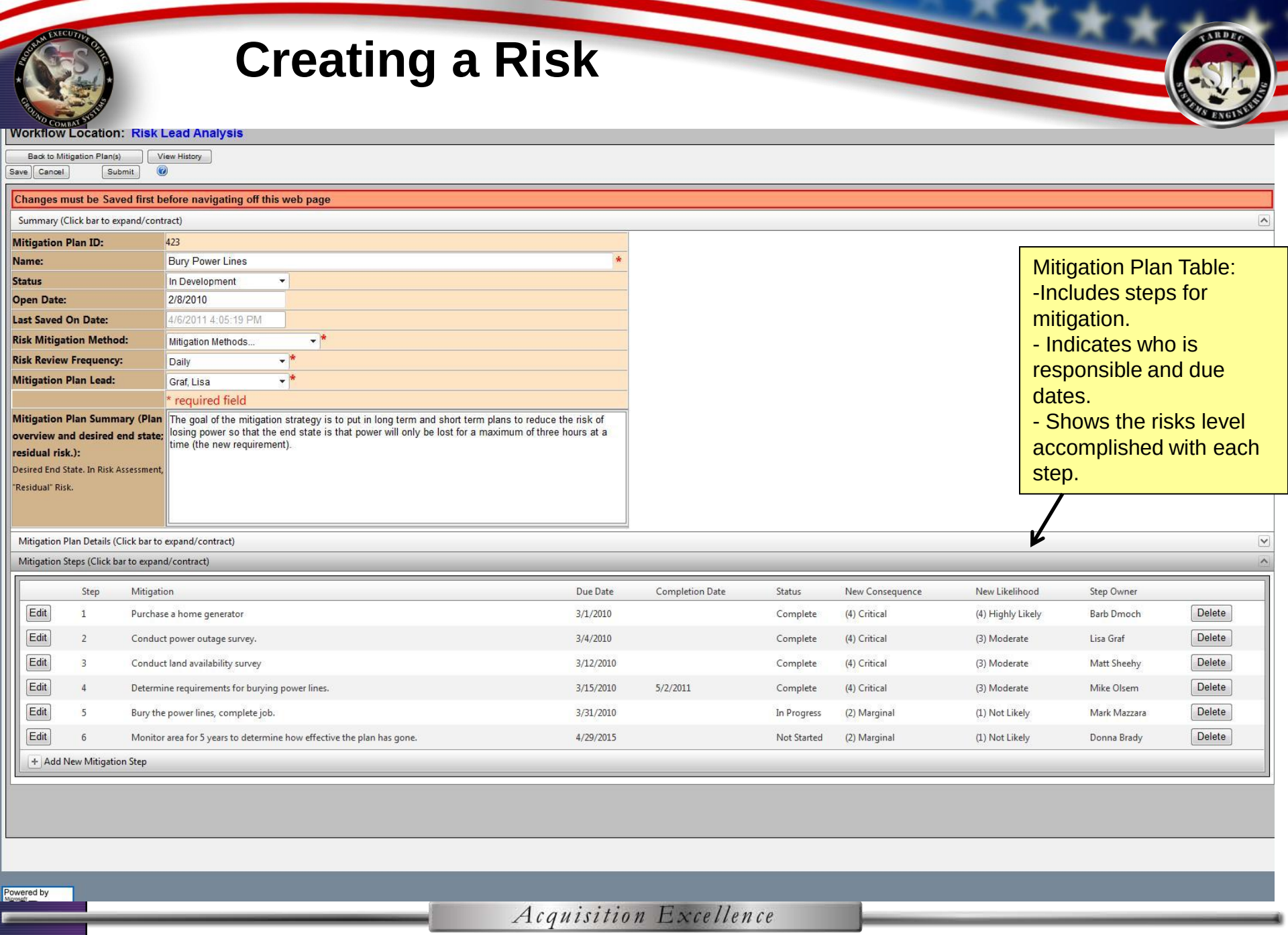
Detailed Risk Analysis (Click bar to expand/contract)

Close Out Rationale – Include date of meeting, who authorized closing the risks, for what reasons, and what is the residual risk.

Powered by Microsoft ASP.net

Done

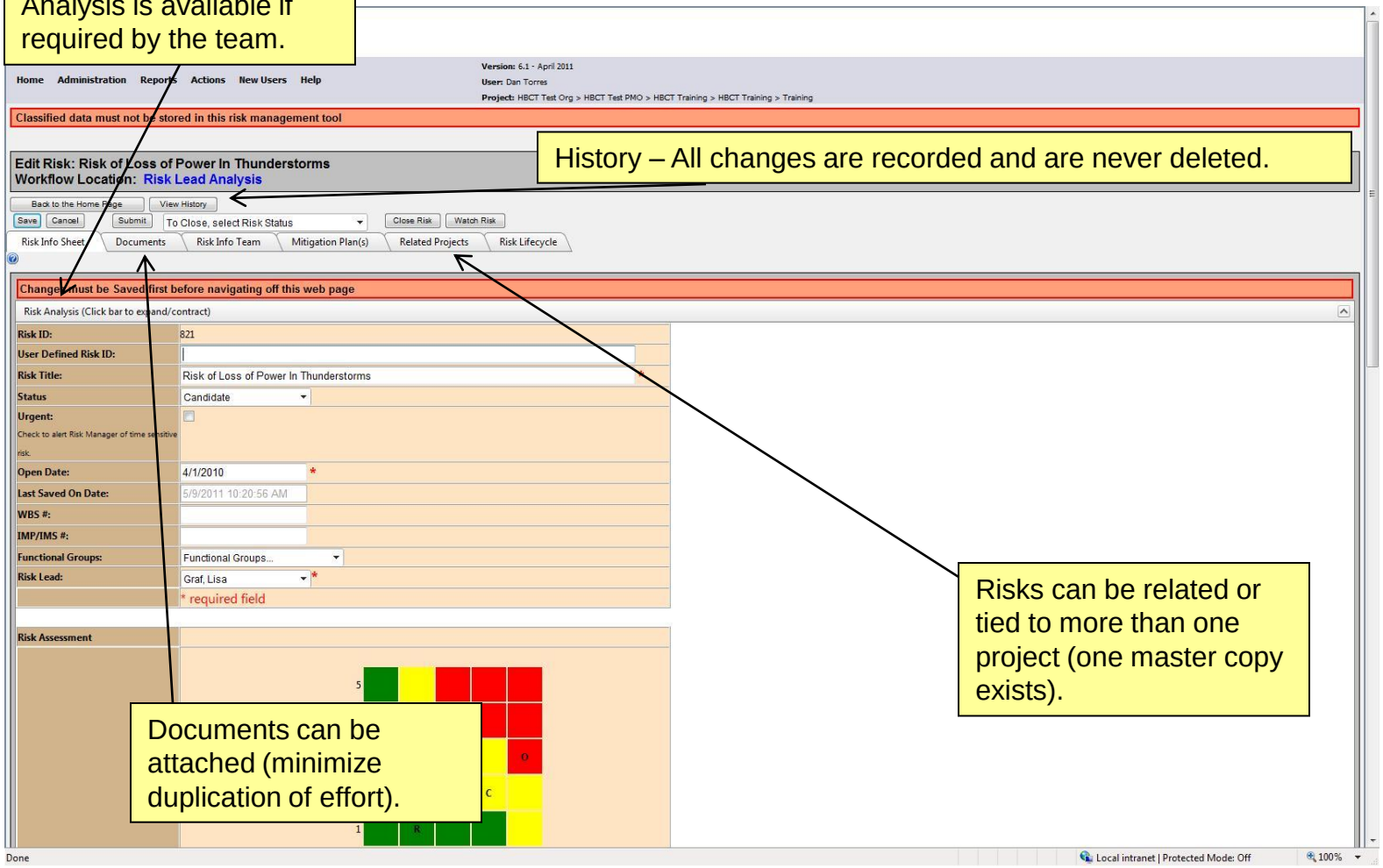
Creating a Risk



Mitigation Plan Table:
-Includes steps for mitigation.
- Indicates who is responsible and due dates.
- Shows the risks level accomplished with each step.

Additional Features

Additional Detailed Analysis is available if required by the team.



History – All changes are recorded and are never deleted.

Risks can be related or tied to more than one project (one master copy exists).

Documents can be attached (minimize duplication of effort).

Risk Recon Reports
Risk Information Sheet

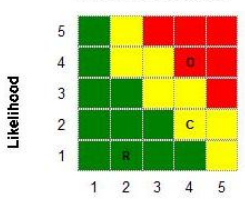
Risk Information Sheet (FOUO)

Risk Title: Training Example - Loss of Power in Thunderstorms
User Defined ID:
Status: Baselined
Unique ID #: 1537
Opened Date: 04/06/2011
Last Saved Date: 04/06/2011
Risk Lead: Graf, Lisa

Risk Information Team Members

Team	Expertise	Member Name

Risk Assessment



Risk Impacts:

X	Cost
X	Schedule
X	Performance
	Other:

Description of Risk Condition: If there is a thunderstorm with high winds and lightning strikes occur, then loss of power to homes may occur and people may be without power.

Context: If a thunderstorm occurs and high winds in excess of 60 mph occur (WHAT), then power lines may come down due to high winds (HOW) and loss of power may occur (WHAT). If lightning strikes occur (WHAT), then transformers may be hit and damaged (HOW) and loss of power may occur (WHAT). This may occur because power lines are exposed to the environment (WHY) and subject to wind damage and lightning strikes. This can affect home and people (WHO) subdivision wide or any building in the area that the power system supplies power to (WHERE).

Consequence if Realized: If power is lost in a storm then homes will not have power. This can lead to loss of food in the refrigerator (COST), alarm clocks that don't work and people may be late to their jobs (SCHEDULE) and worrying about failed systems such as sump pump systems (PERFORMANCE) may cause performance issues at work to those affected.

Current Mitigation Plan(s) for this Risk:

Applied to Risk	Plan Name	Status	Mitigation Method
X	Bury Power Lines	In Development	
	String Stronger Cable and Install New Poles	In Development	

- The "Risk Information Sheet" contains the majority of the information for the risk including the description of the risk, context, consequences and mitigation.
- It can be exported into an Acrobat .pdf file, Excel, CSV, etc.

Applied to Risk	Plan Name	Status	Mitigation Method
X	Bury Power Lines	In Development	
	String Stronger Cable and Install New Poles	In Development	

Mitigation Plan Summary Mitigation Plans include:

NOTE - the person writing this risk bought a generator to temproarily reduce the risk of power loss. This reduces the current risk, but is only a temporary interim mitigation steps.

Final Mitigation Plan:

1. Surveying the power outage database for areas that experience high power loss - 1 June 2010 - Graf.

2. Conducting a root cause analysis for the highest risk area as to what the reason is for the power outages. (NOTE - root cause determined to be wind damage in a high wind corridor). 30 July 2010 -

ges a year, for
that only routine
- Dmoch

m

ines. (NOTE - it
ept 2010 - Sheehy

6. Determine system requirments for burying power lines. 10 Sept 2010 - Haase

7. Plan the job in terms of equipment, manpower and funding needed. 15 Sept 2010 - Torres

8. Present the plan to management for approval. 30 Sept 2010 - Dmoch

9. Implement burying power lines. 31 Oct 2010 - Graf

10. Monitor area for 5 years to determine how effective the plan has gone. 31 Oct 2011 - Graf

NOTE - Residual risk still exists since the main lines have to go from the power tower to the ground, so there will always be residual risk, but the power company guranteed that the main line could be repaired always within 3 hours after failure, thus reducing the consequence impact of loss of power.

Close-Out Rationale:

Mitigation Steps for the Applied Plan

Step	Mitigation	Due Date	Status	New Con. Level	New Lik. Level	Step Owner
1	Purchase a home generator	03/01/2010	Complete	4 - Critical	4 - Highly Likely	Barb Dmoch
2	Conduct power outage survey.	03/04/2010	Complete	4 - Critical	3 - Moderate	Lisa Graf
3	Conduct land availability survey	03/12/2010	Complete	4 - Critical	3 - Moderate	Matt Sheehy
4	Determine requirements for burying power lines.	03/15/2010	In Progress	4 - Critical	3 - Moderate	Mike Olsem
5	Bury the power lines, complete job.	03/31/2010	Not Started	2 - Marginal	1 - Not Likely	Mark Mazzara
6	Monitor area for 5 years to determine how effective the plan has gone.	04/29/2015	Not Started	2 - Marginal	1 - Not Likely	Donna Brady

Report current as of 4/12/2011 2:19:06 PM Page 1 of 1 rptRiskInfoSheet

Risk Recon Reports
Detailed Risk Report – Excel

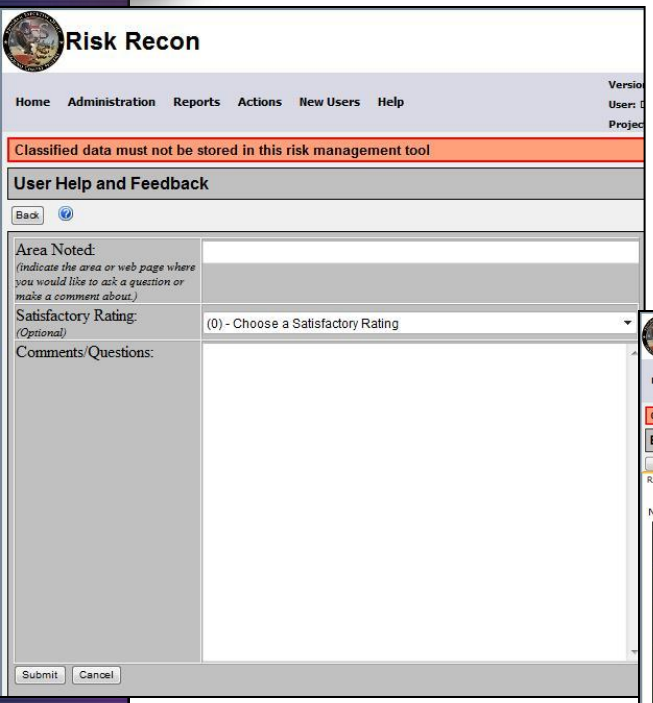
Risk Recon - Detailed Risk Report (FOUO)

HBCT Test Org / HBCT Test PMO / HBCT Training / HBCT Training / test three

Risk ID	Status	Current Con/Lik	Impact	Risk Title	Description of Risk Condition	Context	Consequence if Realized	Mitigation - Rational for Choosing that Mitigation Plan
587	Baselined	4/4	C/S/P	Loss of power in a thunderstorm	If a thunderstorm occurs, then high winds may also occur and power may be lost to household systems.	If a thunderstorm and high winds occur in excess of 60 mph, then power lines may be blown down due entaglement in trees, which may cause loss of power to homes in the neighborhood, and loss of power to home subsystems. The power company is responsible for this system.	Could encounter food spoiling, requiring new food to be purchased.	12/27/09: Bury 3-Nov-10: too expensive to bury, buy generator instead
625	Baselined	4/4	C/S/P/O	Hitting a deer	IF a driver hits a deer THEN their new car MAY be damaged.	The is a potential of hitting a deer.	Damage to a car.	
822	Baselined	4/3	C/S/P	Data Loss	If data rollout begins next week and there is data files lost, then the seemless transfer may not happen and mission requirements will not be met.	testing has been done for one month. lessons learned on other operating operating systems We are updating for system performance needs	Consequence of data files loss, and time loss of people fixing the issues. More time and possibly more resources needed to fix the issue.	

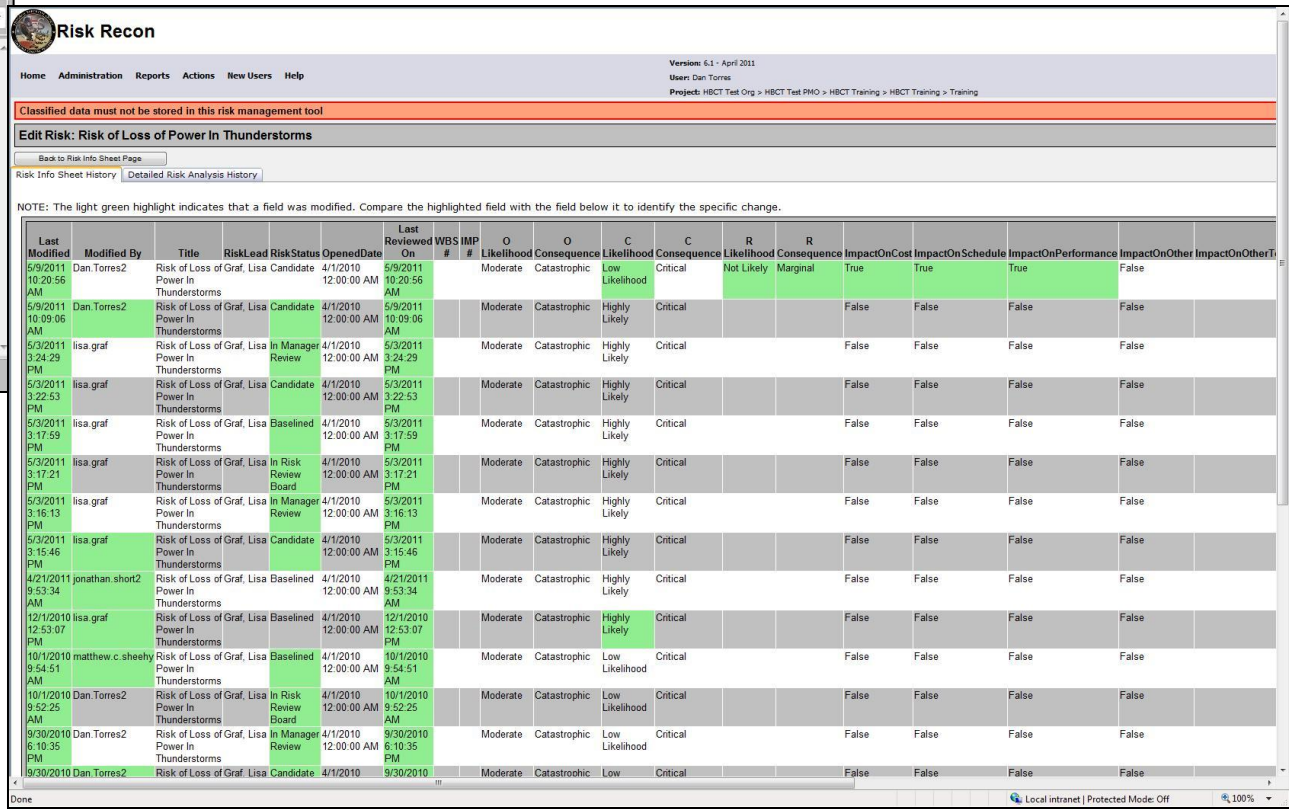
- Risks can also be exported into an Excel spreadsheet.
- This allows for easy sorting, searching and customization for reports.

Future Enhancements



Future Enhancements Include:

- Automatic Error Logging.
- Flag Identification for most recently updated fields.
- Enhanced Report Filtering.
- Revive option for mitigation plans on revived risks.



Last Modified	Modified By	Title	RiskLead	RiskStatus	OpenedDate	Last Reviewed On	WBS #	IMP #	O Likelihood	O Consequence	C Likelihood	C Consequence	R Likelihood	R Consequence	ImpactOnCost	ImpactOnSchedule	ImpactOnPerformance	ImpactOnOther	ImpactOnOtherT
5/9/2011 10:20:56 AM	Dan.Torres2	Risk of Loss of Power In Thunderstorms	Graf, Lisa	Candidate	4/1/2010 12:00:00 AM	5/9/2011 10:20:56 AM			Moderate	Catastrophic	Low Likelihood	Critical	Not Likely	Marginal	True	True	True	False	
5/9/2011 10:09:06 AM	Dan.Torres2	Risk of Loss of Power In Thunderstorms	Graf, Lisa	Candidate	4/1/2010 12:00:00 AM	5/9/2011 10:09:06 AM			Moderate	Catastrophic	Highly Likely	Critical			False	False	False	False	
5/3/2011 3:24:29 PM	lisa.graf	Risk of Loss of Power In Thunderstorms	Graf, Lisa	In Manager Review	4/1/2010 12:00:00 AM	5/3/2011 3:24:29 PM			Moderate	Catastrophic	Highly Likely	Critical			False	False	False	False	
5/3/2011 3:22:53 PM	lisa.graf	Risk of Loss of Power In Thunderstorms	Graf, Lisa	Candidate	4/1/2010 12:00:00 AM	5/3/2011 3:22:53 PM			Moderate	Catastrophic	Highly Likely	Critical			False	False	False	False	
5/3/2011 3:17:59 PM	lisa.graf	Risk of Loss of Power In Thunderstorms	Graf, Lisa	Baselined	4/1/2010 12:00:00 AM	5/3/2011 3:17:59 PM			Moderate	Catastrophic	Highly Likely	Critical			False	False	False	False	
5/3/2011 3:17:21 PM	lisa.graf	Risk of Loss of Power In Thunderstorms	Graf, Lisa	In Risk Review Board	4/1/2010 12:00:00 AM	5/3/2011 3:17:21 PM			Moderate	Catastrophic	Highly Likely	Critical			False	False	False	False	
5/3/2011 3:16:13 PM	lisa.graf	Risk of Loss of Power In Thunderstorms	Graf, Lisa	In Manager Review	4/1/2010 12:00:00 AM	5/3/2011 3:16:13 PM			Moderate	Catastrophic	Highly Likely	Critical			False	False	False	False	
5/3/2011 3:15:46 PM	lisa.graf	Risk of Loss of Power In Thunderstorms	Graf, Lisa	Candidate	4/1/2010 12:00:00 AM	5/3/2011 3:15:46 PM			Moderate	Catastrophic	Highly Likely	Critical			False	False	False	False	
4/21/2011 9:53:34 AM	jonathan.short2	Risk of Loss of Power In Thunderstorms	Graf, Lisa	Baselined	4/1/2010 12:00:00 AM	4/21/2011 9:53:34 AM			Moderate	Catastrophic	Highly Likely	Critical			False	False	False	False	
12/1/2010 12:53:07 PM	lisa.graf	Risk of Loss of Power In Thunderstorms	Graf, Lisa	Baselined	4/1/2010 12:00:00 AM	12/1/2010 12:53:07 PM			Moderate	Catastrophic	Highly Likely	Critical			False	False	False	False	
10/1/2010 9:54:51 AM	matthew.c.sheehy	Risk of Loss of Power In Thunderstorms	Graf, Lisa	Baselined	4/1/2010 12:00:00 AM	10/1/2010 9:54:51 AM			Moderate	Catastrophic	Low Likelihood	Critical			False	False	False	False	
10/1/2010 9:52:25 AM	Dan.Torres2	Risk of Loss of Power In Thunderstorms	Graf, Lisa	In Risk Review Board	4/1/2010 12:00:00 AM	10/1/2010 9:52:25 AM			Moderate	Catastrophic	Low Likelihood	Critical			False	False	False	False	
9/30/2010 6:10:35 PM	Dan.Torres2	Risk of Loss of Power In Thunderstorms	Graf, Lisa	In Manager Review	4/1/2010 12:00:00 AM	9/30/2010 6:10:35 PM			Moderate	Catastrophic	Low Likelihood	Critical			False	False	False	False	
9/30/2010	Dan.Torres2	Risk of Loss of	Graf, Lisa	Candidate	4/1/2010	9/30/2010			Moderate	Catastrophic	Low	Critical			False	False	False	False	

Risk Management brings structure and order to the unknown.

Resources

- **Risk Management Guide for DOD Acquisition, http://www.acq.osd.mil/sse/docs/2006RMGuide4Aug06finalversion.pdf**
- **Risk Recon**
  - **Link→ https://peoportalap.tacom.army.mil/riskmgmt/Default.aspx**
    - **User Guide (click help in Risk Recon)**
    - **Workflow (located in the User Guide)**
    - **Risk Management Plan (click help in Risk Recon)**
    - **Tip Sheet (click help in Risk Recon)**
    - **Standard Operating Procedure (PEO GCS Knowledge Center)**
- **Risk Admin for your Organization**
  - **Cynthia Crawford – 586-282-0768 – MRAP/TARDEC - cynthia.crawford1@us.army.mil**
- **PEO GCS Point-of-Contact**
  - **George Wiklund - george.wiklund@us.army.mil**